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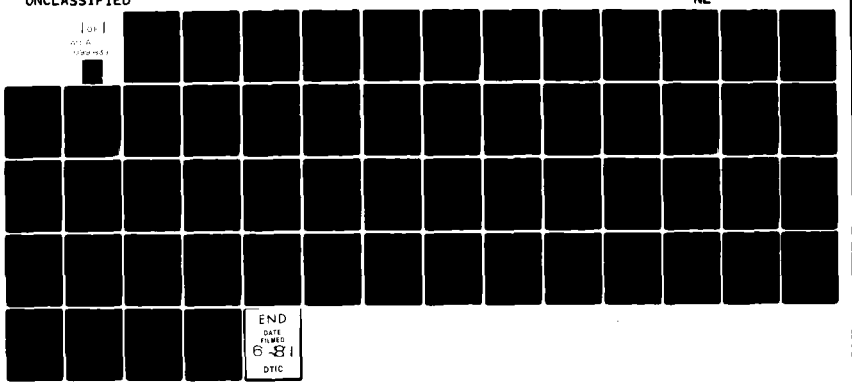

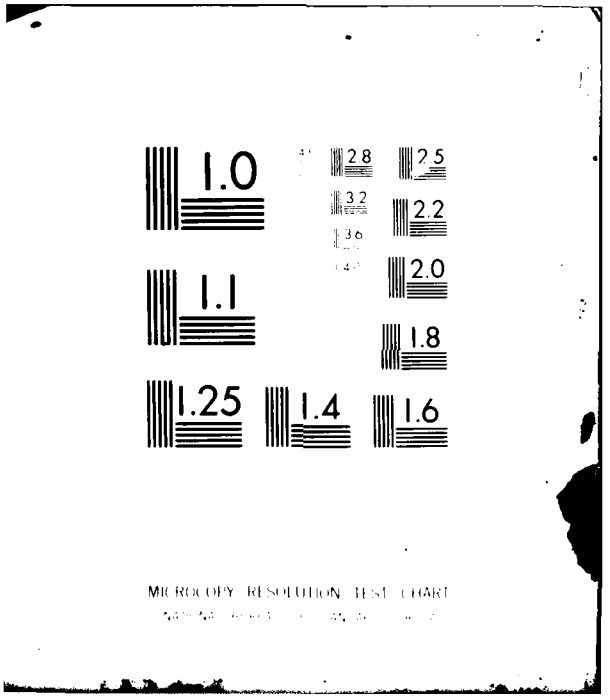
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# F-16 AIRCREW TRAINING DEVELOPMENT PROJECT

Contract No. F02604-79-C8875



## F-16 INSTRUCTIONAL SYSTEMS BASING CONCEPT

## DEVELOPMENT REPORT No. 28

MARCH 1981

Prepared in fulfillment of CDRL no. B048

by

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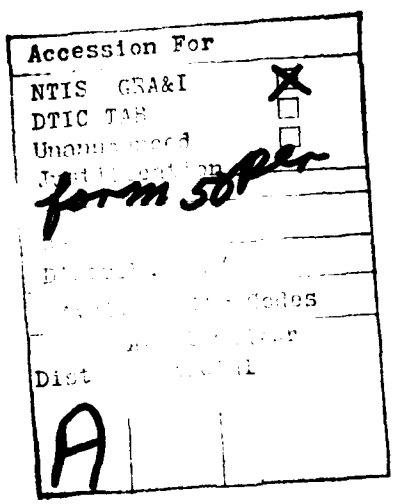
# PREFACE

This report was created for the F-16 Aircrew Training Development Project contract no. F02604-79-C8875 for the Tactical Air Command to comply with the requirements of CDRL no. B048. The project entailed the design and development of an instructional system for the F-16 RTU and instructor pilots. During the course of the project, a series of development reports was issued describing processes and products. A list of those reports follows this page. The user is referred to Report No. 34, A - / Users Guide to the F-16 Training Development Reports, for an overview and explanation of the series, and Report No. 35, F-16 Final Report, for an overview of the Instructional System Development Project.



## F-16 AIRCREW TRAINING DEVELOPMENT PROJECT REPORTS

Copies of these reports may be obtained by writing the Defense Technical Information Center, Cameron Station, Alexandria, Virginia 22314. All reports were reviewed and updated in March 81.

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Farrow, D.R., & King, K. F-16 coursewares and syllabi delivery schedule (F-16 Development Report No. 24). San Diego, Calif.: Courseware, Inc., September 1979, March 1981.

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Gibbons, A.S. F-16 instructional system basing concept (F-16 Development Report No. 28). San Diego, Calif.: Courseware, Inc., September 1979, March 1981.

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# EXECUTIVE SUMMARY

The purpose of this report is to present a concept for the basing of F-16 Replacement Training Unit (RTU) training sites and a mechanism for determining the configuration and training resource requirements at each site. The basing concept is presented first, defined by the location at which instructional system functions are carried out, either in centralized or distributed form. A resource calculation tool, called the Training Support Requirements Analysis (TSRA), is given in the form of a step-by-step job aid usable by all levels of TAC training management.

The scope of this report covers the basing concept from the standpoint of instructional system function and efficiency of system operation. Factors related to operational squadron and wing economics and concepts of weapon employment are not dealt with here, since those considerations are beyond the scope of training analysis. In making basing decisions it is assumed that TAC will consult this and other data and that all factors will be weighed together in due proportion.

The general basing concept for the F-16 training system is defined in terms of system functions. Attachment I contains a list of the functions which the F-16 training system is designed to execute. Some functions are directly involved in the instruction of students and must be carried out in a distributed fashion, with those functions being executed at each training site. Other functions not directly related to instruction of students but nonetheless critical may be carried out in a centralized fashion at one location within the system (presumably by an Operations Training Development (OTD) team).

The TSRA worksheets included in Section 3.0 allow Air Force personnel to determine the exact requirements for Instructor personnel (flight, simulator and training device, classroom and learning center), support personnel (instructor and student support, as well as learning center operators), office space and furnishings, learning center media equipment, training device equipment, learning center facilities (study area, checkout area, learning center operator's office, storage area, classrooms, training device space, and student lounge) and training device personnel and facilities.

CONTENTS

# F-16 INSTRUCTIONAL SYSTEM BASING CONCEPT

## 1.0 PURPOSE AND ORGANIZATION

The purpose of this report is to present a concept for the basing of F-16 Replacement Training Unit (RTU) training sites and a mechanism for determining the configuration and training resource requirements at each site. The basing concept is presented first, defined by the location at which instructional system functions are carried out, either in centralized or distributed form. A resource calculation tool, called the Training Support Requirements Analysis (TSRA), is given in the form of a step-by-step job aid usable by all levels of TAC training management.

The scope of this report covers the basing concept from the standpoint of instructional system function and efficiency of system operation. Factors related to operational squadron and wing economics and concepts of weapon employment are not dealt with here, since those considerations are beyond the scope of training analysis. In making basing decisions it is assumed that TAC will consult this and other data and that all factors will be weighed together in due proportion.

## 2.0 GENERAL BASING CONCEPT

The general basing concept for the F-16 training system is defined in terms of system functions. Attachment I contains a list of the functions which the F-16 training system is designed to execute. Some functions are directly involved in the instruction of students and must be carried out in a distributed fashion, with those functions being executed at each training site. Other functions not directly related to instruction of students but nonetheless critical may be carried out in a centralized fashion at one location within the system (presumably by an Operations Training Development (OTD) team).

The system organization shown in Figure 1 has been generated from the allocation of functions presented in Attachment I. Centralization occurs at two levels both at TAC and at Wing level. This concept is predicated on the assumption that the normal training site will consist of several RTU squadrons comprising a training wing. Overall system maintenance is

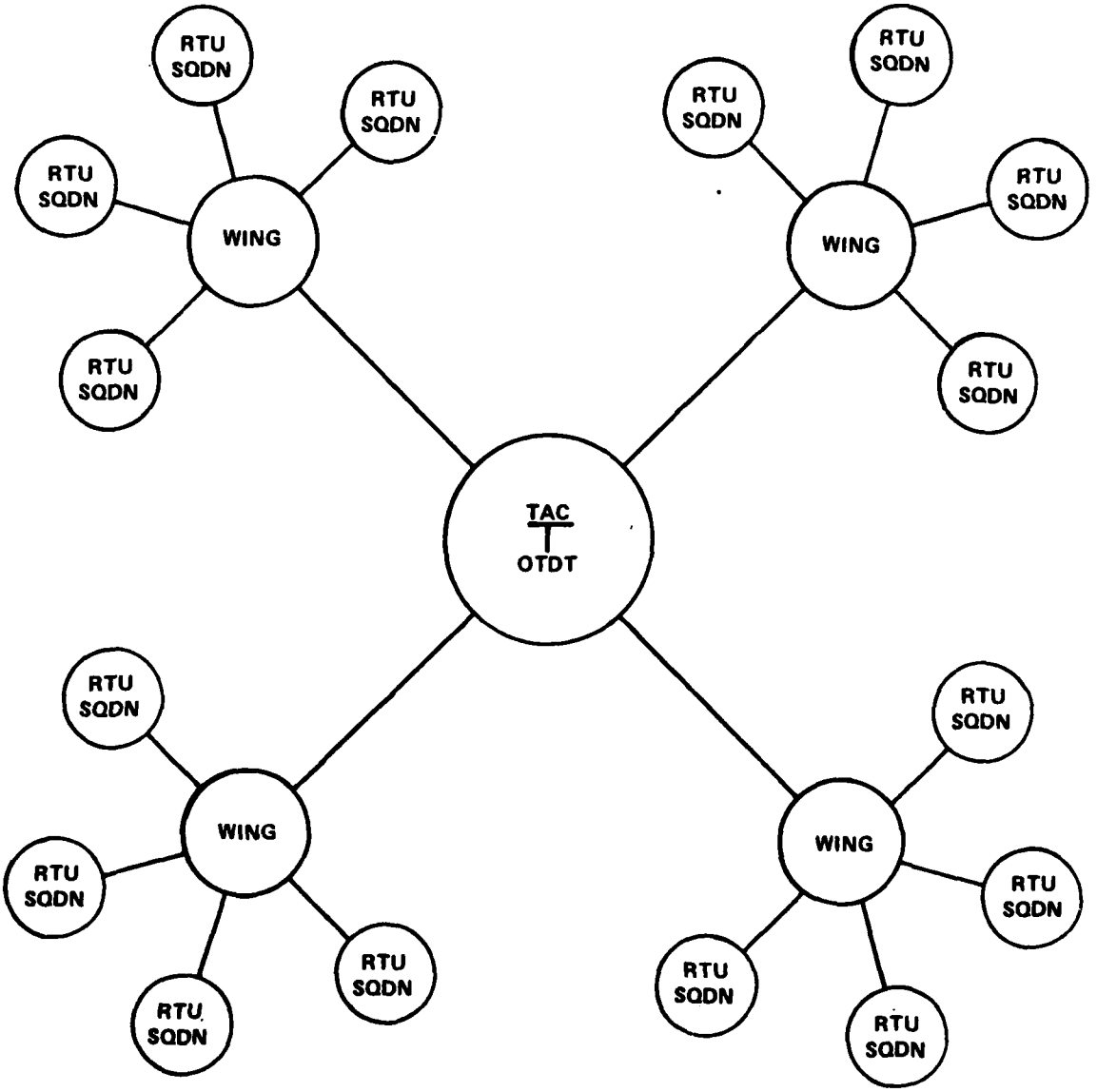



FIGURE 1. CONCEPT OF F-16 TRAINING SYSTEM ORGANIZATION AND FUNCTION ALLOCATION.

carried out by TAC level personnel, student screening and administration is performed by the Wing, while the Squadron is responsible for delivering instruction and performing first-line evaluation of student performance. A recommended allocation of function to each of these levels is presented below, and Figure I represents the assumed relationship between these three allocation levels. Attachment I presents a more detailed breakdown of these functions, with TAC, Wing, and Squadron level functions indicated by the prefix "T," "W," or "S," respectively.

Training sites are assumed to be nearly identical in configuration. All of them execute a common set of functions, and so only vary in the number of students trained, size or type of syllabus used, and training devices available. Though there may be minor variations in the number of resources available at each site for training, it is expected that there will be a general conformity between training sites in personnel, training devices, facilities, and material.

It is recommended that hands-on training devices be centralized at no higher than Wing level so that they can be used most effectively through integration with academic and flight training.

The following functions are provided by TAC, the Wing, and the Squadron.

TAC FUNCTIONS

1. Provide general system administration.
2. Supervise instructional materials maintenance.
3. Perform materials update/revision.
4. Perform data base maintenance.
5. Perform system procedures maintenance.
6. Monitor/Coordinate formative evaluation.
7. Perform graduate evaluation.
8. Implement system change.

WING FUNCTIONS

1. Perform local instructional administration.
2. Screen and administer incoming students.

3. Prescribe incoming remediation.
4. Provide remediation.
5. Train system personnel.
6. Supervise formative evaluation.
7. Maintain facilities and equipment.
8. Perform formative evaluation.

SQUADRON FUNCTIONS

1. Provide and supervise instruction.
2. Conduct performance measurement.
3. Provide student advisement.
4. Maintain local materials inventories.
5. Monitor personnel.
6. maintain facilities and equipment.
7. Participate in formative evaluation.

## 3.0 TRAINING SUPPORT REQUIREMENTS ANALYSIS (TSRA)

This section contains a job aid for calculating training resource requirements for a given training site. Inputs required for the calculation process are:

(1) the syllabus to be implemented at the training site,

(2) the number of students per class, and

(3) the number of classes to be trained per year at the training site.

Outputs of the TSRA are numbers of personnel, training devices, and facilities needed to carry out training. These numbers may be used to procure such items prior to the set-up of a new training site. The job aid is organized as follows:

I. Instructor Requirements

- A. Flight
- B. Simulator and Training Device
- C. Classroom
- D. Learning Center

II. Support Personnel

- A. Instructor Support
- B. Student Support
- C. Learning Center Workers

III. Non-Learning Center Office Space and Furnishing

IV. Learning Center Media Equipment

V. Training Device Equipment

VI. Learning Center Facilities

- A. Study Area
- B. Checkout Area
- C. Learning Center Operator Office
- D. Storage
- E. Classrooms
- F. Training Device Space
- G. Lounge

VII. Training Device Personnel and Facilities

I. Instructor Requirements. This section will calculate the number of instructors required to carry out classroom, Learning Center, and flight instructor duties.

A. Flight Instructors

1. Obtain sufficient copies of Worksheet 1 and enter:

   (a) the number of each flight in the syllabus (Column A),

   (b) the duration in hours of each flight (Column B),

   (c) the number of instructors accompanying the flight (Column C),

   (d) the number of students in the flight (Column D),

   (e) the number of aircraft used (Column E),

   (f) the amount of preparation, brief, and debrief time required for the flight (Column F).

2. For each flight divide the number in Column C by the number in Column D. Multiply that by the number in Column B and add the number in Column F. Put the answer in Column G. This calculates the instructor equivalent per student for each flight.

3. Sum down Column G for all flights and enter here. _____ This is the total flight instructor requirement per student (the total number of flight instructor hours required to instruct one student through the course).

4. Enter the average number of students expected per class. _____

5. Multiply no. 4 by the number of classes expected or scheduled per year and enter that product here. _____ This is the estimated number of students to be trained per year.

6. Multiply no. 3 by no. 5. This gives you the total flight instructor hours required per year for this course. _____

7. Enter the total number of hours a flight instructor is available per year for flight instruction duties. _____ Obtain this number from TACM 25-5.

8. Divide no. 6 by no. 7. _____ This will tell you how many individual instructors are needed as a minimum to carry out flight instruction for this course during a year. Add this figure to the flight instructor requirement for all other courses taught by the squadron to determine the total requirement for flight instructors.

WORKSHEET #1 (USE TWO PAGES IF NECESSARY)
INSTRUCTOR HOUR REQUIREMENT CALCULATIONS

| A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|
| FLIGHT NUMBER | HOURS OF FLIGHT DURATION | NUMBER OF INSTRUCTORS | NUMBER OF STUDENTS | NUMBER OF AIRCRAFT | TIME SPENT IN PREPARATION, BRIEF & DEBRIEF | $\frac{C}{D} \times B + F$ |
| | | | | | | |

B. Simulator and Trainer Instructors

1. Obtain a separate copy of worksheet no. 2 for each training device and enter:

   (a) the number of each exercise conducted in that training device (Column A),

   (b) the duration of the exercise in hours (Column B),

   (c) the number of instructors needed to conduct the exercise (Column C),

   (d) the number of students who will participate in the exercise (Column D),

   (e) the amount of time which will be spent in preparation, briefing, and debriefing (Column E).

2. For each exercise divide the number in Column C by the number in Column D and multiply the quotient by the number in Column B. Add to that the number in Column E. Put the answer in Column F. This calculates the instructor equivalent for each exercise.

3. Sum down Column F for all exercises and enter the answer under "TOTAL." This is the total simulator and trainer instructor requirement for each training device (the number of hours required to instruct one student through the course).

4. Enter the number from line 5 of the flight instructor calculations here. _____. This is the estimated number of students to be trained per year.

5. Multiply the "TOTAL" for each training device by no. 4. This gives you the total instructor hours requirement for each training device per year. Enter the result under "TOTAL HOURS PER YEAR". This gives you the total instructor hours required per year for each training device.

6. Enter on each worksheet the total number of hours a training device or simulator instructor is available per year for instruction duties. Enter it under "AVAILABLE HOURS PER INSTRUCTOR". Obtain the figure from TACM 25-5.

7. For each worksheet divide the "TOTAL HOURS PER YEAR" figure by the "AVAILABLE HOURS PER INSTRUCTOR" figure and enter it under "INSTRUCTORS REQUIRED". This will tell you for each training device the number of instructors needed as a minimum to carry out instruction in that device during a year for this course. Add these figures to the training device insructor requirements from other courses taught within the squadron to determine the total requirement for training device instructors.

WORKSHEET #2 (USE AS MANY COPIES AS NEEDED)
SIMULATOR AND TRAINER INSTRUCTOR REQUIREMENT CALCULATIONS

| A | B | C | D | E | F |
|---|---|---|---|---|---|
| TD SESSION # | SESSION LENGTH | NUMBER OF INSTRUCTORS | NUMBER OF STUDENTS | PREPARATION, BRIEF & DEBRIEF TIME | $\frac{C}{D} \times B + E$ |
| | | | | | |
| | | | | TOTAL | |
| | | | | TOTAL HOURS PER YEAR | |
| | | | | AVAILABLE HOURS PER INSTRUCTOR | |
| | | | | INSTRUCTORS REQUIRED | |

C. Classroom instructors

1. Obtain one copy of Worksheet no. 3 and enter:

   a. The average number of students participating in each type of classroom event (Column A). Under "OTHER" enter any event type not listed.

   b. The number of events of each type contained in the syllabus (Column B). Disregard differences in length in deriving this value.

   c. The total number of hours of instruction of each type in the syllabus (Column C).

   d. The average number of hours an air instructor must spend prior to and after each type of instructional event in preparation, or follow up per one hour of class (e.g., aids preparation, preparatory study, record keeping, etc.) (Column D).

2. For each type of event divide the number in Column C by the number in Column A. Add that result to the product of the number in Column B times the number in Column D. Do not add before multiplying B x D. This calculates the instructor equivalent required per student per event.

3. Add down Column E and place the total in Space F. This is the total of instructor equivalents required for all classroom instruction.

4. Obtain the number of students taught per year from Line 5 of the Flight Instructor Calculations. Enter that number in Space G.

5. Enter the average number of hours an instructor is expected to spend per week per student nonclassroom instructional activities such as counseling students or answering student instruction-related questions. _____

6. Multiply no. 5 by 52 and enter the result in Space H. This is the total requirement per student per year of instructor nonclassroom time.

7. Add Space H to Space F and then multiply the result by Space G. This is the total number of instructor hours required per year. Put the result in Space I.

8. Enter into Space I the number of hours a classroom instructor is available for instruction duties per year. This value can be found in TACM 25-5.

9. Divide Space I by Space J and put the result in Space K. This is the minimum number of instructors required per year for this course for classroom instruction. Add this number to the number of classroom instructors required for other courses to obtain the total squadron requirement.

WORKSHEET #3 (ONE ONLY REQUIRED)
CALCULATION OF CLASSROOM INSTRUCTOR REQUIREMENTS

| TYPE OF INSTRUCTIONAL EVENT | A AVERAGE NUMBER OF STUDENTS TAUGHT AT ONCE | B NUMBER OF THIS TYPE OF EVENTS IN SYLLABUS | C TOTAL HOURS OF INSTRUCTION OF THIS TYPE | D AVERAGE HOURS OF PREPARATION BY INSTR. / HR. OF EVENT | E TOTAL INSTRUCTOR HOUR EQUIVALENT REQUIREMENT |
|---|---|---|---|---|---|
| SEMINAR | | | | | |
| LECTURE | | | | | |
| TUTORIAL | | | | | |
| OTHER | | | | | |

| | | |
|---|---|---|
| F | TOTAL CLASSROOM INSTRUCTOR HOUR EQUIVALENTS | |
| G | TOTAL NUMBER OF STUDENTS TAUGHT PER YEAR | |
| H | TOTAL HOURS OF INSTRUCTOR REQUIRED | |
| I | HOURS PER INSTRUCTOR AVAILABLE PER YEAR | |
| J | MINIMUM CLASSROOM INSTRUCTORS PER YEAR REQUIRED | |

D. Learning Center Instructors

1. Enter the number of instructors to be on duty at the Learning Center at one time. _____ This figure will come from local policy.

2. Enter the number of hours the Learning Center is to be open each day. _____ This figure will come from local policy.

3. Enter the number of Learning Center operation days per year. _____ This number will come from local policy.

4. Multiply no. 2 by no. 3. _____ This answer is the number of Learning Center operating hours per year.

5. Multiply no. 4 by no. 1. _____ This answer is the number of Learning Center instructor hours required each year.

6. Enter the number of hours an instructor is available per year for instructional duty. _____ This number is available in TACM 25-5.

7. Divide no. 5 by no. 6 _____ This answer is the minimum number of Learning Center instructors required per year to staff the Learning Center.

II. Support Personnel

Support personnel required include the present normal complement of support personnel, augmented by a minimum of two additional personnel: (1) An instructor support person, and (2) a student support person whose duties are designed to support added data collection and reporting functions attendant to system implementation. Instructor support personnel are those whose duties are related to the keeping of instructor records and/or assisting instructors with administrative functions. Student support personnel are those whose duties are related to keeping of student records.

Assumed as the present normal complement of support personnel are:

2 Adminstrative personnel connected with the squadron executive officer,

1 Squadron secretary,

1 Flight of three to four Squadron officers normally assigned scheduling responsibilities within the squadron (halftime) and their flight commander,

2-4 Enlisted personnel working at the Wing scheduling office, (quarter time), and

An undetermined number of personnel working at Wing level to keep flight data with the aid of a computerized data system, form 5.

In addition to the normal complement of support personnel and the two additional personnel described above, a Squadron Equipment Officer (SEO) and Wing Equipment Officer (WEO) are required part time to supervise use, scheduling, and maintenance of Squadron and Wing training equipment.

III. Non-Learning Center office space and furnishing.

This section calculates the office space and furnishings required to house non-Learning Center personnel.

Non-Learning Center personnel include:

1. All instructors (flight simulator, trainer, and academic), and

2. All instructor and student support administrators.

Office space and furnishings must be provided for these personnel. Computations may be made for a minimal office space requirement (55 square feet) large enough to accommodate only a desk, chair, and filing cabinet or for an optimal office space (70 square feet) with room for a second chair and bookcase. Instructor and student support personnel will need an additional 1-2 file cabinets each to maintain the paperwork related to system management, which is their responsibility.

IV. Learning Center Media Equipment. This section will calculate the number of media devices required for instructional purposes at the Learning Center, including carrels to house the media devices and bare carrels for printed material study purposes.

1. Obtain one copy of Worksheet no. 4 and record all media devices required for delivery of instruction in Column A. Bare carrels for study purposes are among those already entered in the Worksheet and calculations for their requirements are based on 50% of the workbook media. Since slide projectors and audiotape players are used as separate media devices as well as a combined device they are listed separately as well as in tandem. It is assumed that each media device will be located in its own study carrel.

2. Enter the number of instructional segments using each media device in Column B.

3. Enter the average length in hours of the segments using each device type in Column C. This may be obtained by averaging reported time lengths found in the syllabus. For bare study carrels, estimate the average reading time for a workbook segment and record half that value.

4. Enter in Column D the amount in hours of noninstructional time expended for the average segment during which students are settling into, setting up for use, or clearing out of devices.

5. In some cases students having seen an instructional program once will wish to view portions of it again. Enter the percentage of the average instructional segment which will be reviewed by the student in Column E. Add 1.00 to this percent expressed as a decimal. _____

6. Estimate the percentage of time each media device will be unusable due to broken or otherwise inoperable equipment. Convert the percentage to decimal form and enter the result in Column F.

7. All media devices cannot be kept busy 100 percent of the time. Also, it is not desirable to have students standing in line for media devices. Estimate the percentage of nonuse time which can be tolerated for each type of media device. This means the percentage of the time that the average media device will not be used. Convert the percentage to a decimal, and enter it in Column G.

8. Enter the number of students to be trained. _____ Obtain this number from Line 5 of the Flight Instructor calculations in Part I.

9. Enter the number of Learning Center operating hours per year. _____ Obtain this number from Line 4 of the Learning Center Instructor calculations in Part I.

10. For each device, multiply the number in Column C by the number in Column E. Add to that result the number in Column D. Multiply this total by the number in Column B. Enter the result in Column H. This is the total instructional time required for one student on each media device.

11. For each device, multiply the number in Column H by Line no. 8. Multiply that result by Column F plus Column G plus 1.0. Enter the result in Column I. This gives the total hours of use time for each device.

12. For each device divide the number in Column I by Line no. 9. Enter the answer in Column J. This is the total number of media devices of each type required for the Learning Center. Round to the nearest whole number and add 1.0 for spares.

13. Add down Column J, rounding upward when decimals are encountered. _____ This sum will equal the total number of carrels, bare and with equipment, needed to house Learning Center media devices. Do not add the value of CAI terminals if they are included in the media device list.

WORKSHEET #4 (ONE ONLY REQUIRED)

CALCULATION OF MEDIA DEVICE REQUIREMENTS FOR THE LEARNING CENTER

| | B | C | D | E | F | G | H | I | J |
|---|---|---|---|---|---|---|---|---|---|
| MEDIA DEVICE TYPE | NUMBER OF SEGMENTS USING THE DEVICE | AVERAGE LENGTH OF ASSIGNMENT USING DEVICE | AVERAGE SET-UP TIME PER SEGMENT | PERCENT OF PROGRAM REVIEW | DOWN TIME FACTOR | NON-DEMAND FACTOR | (C×E+D)×B | (H×LINE B)×(1.0+F+G) | NUMBER OF DEVICES REQUIRED |
| AUDIOTAPE PLAYER ONLY | | | | | | | | | |
| SLIDE PROJECTOR ONLY | | | | | | | | | |
| SLIDE PROJECTOR-AUDIOTAPE PLAYER COMB. | | | | | | | | | |
| VIDEOTAPE CARREL | | | | | | | | | |
| BARE STUDY CARREL | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

V. Training Device Equipment: This section calculates the number of each type of training device required for training at one site. The caluclation procedure below must be executed for each training device. Devices for which calculations must be made include those named in the syllabus (i.e., CFT, EPT, OFT).

1. Enter the sum of the lengths of each session conducted using this training device.

2. Estimate the amount of time in fractions of hours required on the average to set up the training device for a single session. Include time for entering the device and reprogramming the device for use.

3. Enter the total number of training device sessions conducted in this device. ____

4. Enter the number of students to be trained per year. ___ Obtain this figure from Line no. 5 under Flight Instructor Calculations in Part I.

5. Multiply no. 2 by no. 3 and multiply the result by no. 4. ____ This number is the total number of hours spent each year in set-ups.

6. Multiply no. 1 by no. 4. ____ This is the number of session hours of instructions per year.

7. Add no. 6 and no. 5. ____ This represents the total first-time instructional use of the training device, including set-up and instuction.

8. Students will fail some sessions or will need to repeat them for other reasons. Estimate the frequency of this happening as a percentage. Convert the percentage to a decimal, add 1.00, and enter that total. ____

9. Multiply no. 8 by no. 7. ____ This number is the number of hours the training device is required for instructional use every year.

10. Enter the number of hours the training device will be available for use each day. ____

11. Enter the number of days each year the training device will be accessible for student use. ____

12. Multiply no. 10 by no. 11. ____ This is the number of hours each year the training device is potentially available for use.

13. Estimate the percentage of the time the training device will be broken or unavailable for use due to periodic maintenance. ____

14. Estimate that percentage of the time which nonuse of the training device can be tolerated. ____

15. Add no. 13 to no. 14. ____

16. Multiply no. 15 by no. 12. ____ This represents the number of unavailable hours per year for the training device.

17. Subtract no. 16 from no. 12. This represents the corrected total number of hours per year the training device will be available for instructional use.

18. Divide no. 9 by no. 17 and round. ____ This represents the minimum total number of training devices required per year to carry out training of the anticipated number of students under the syllabus.

VI. Learning Center facilities: This section will calculate the space and furnishing requirements for the Learning Center, including associated study areas, classrooms, training devices located at the Learning Center, and storage areas.

A. Study area

1. Enter the total number of carrels to be located at the Learning Center. _____ Obtain this number from Line no. 13 under Learning Center Media Equipment Calculations in Part IV.

2. Multiply no. 1 by 38. _____ This will give you the minimum size in square feet of the study area needed at the Learning Center. The final determination of size must include a specific scaled floor plan which shows the location of each carrel and insures that carrels are located with sufficient walking and sitting space and in such a relation that users of carrels will not disturb each other. Learning Center carrel space requirements are based upon the standard carrel presently in use by TAC in the majority of its installations. These carrels are federal stock number (FSN) 6910004260872 and measure 49 by 49 inches. When appropriate aisle and access space is taken into account, each carrel installation requires a total of 38 square feet. The study area should be carpeted for noise abatement, well lighted, and should have acoustic walls and ceilings. Adequate electrical power must be provided for the carrels having audiovisual equipment. In addition, the area should be shielded for presentation of classified audiovisual presentations.

B. Checkout area

A media checkout area is required adjacent to the study area for checkout of the workbooks, tape/slide programs, and videotape programs. This must be a secure area to accommodate storage of those materials/programs containing classified data. The media library/checkout area should contain approximately 64 square feet. Exact dimensions may vary, so long as a convenient working area is preserved. This area requires no furnishings except a single desk, and it does require a window/counter over which to check materials out to students.

C. Learning Center operator office

Office space for the learning center operator(s) is required. The optimum space allocated for each operator should be 70 square feet, with a minimum allowance of 55 square feet. It would be most convenient for this office to be located within the secure checkout area and adjacent to it.

D. Storage

Storage of instructional materials, tests, records, and other administrative materials requires space, shelving, and file cabinets. Storage should be located adjacent to or in the same room with the checkout area. However, additional space and shelving will be required as calculated below.

1. Obtain a copy of Worksheet no. 5 and enter in Column A all of the types of media to be stored. It is assumed that when two items of one presentation are to be stored, for example, slides and an audiotape used together, that they will be stored together rather than apart to avoid excessive time and motion being used during their retrieval.

2. For each type of material to be stored enter in Column B the shelf height required for storing materials. Allow some space over and above the exact dimensions of the boxes, etc. to be stored. It is assumed that audiotapes are best stored in 3 x 5 card file boxes which measure approximately 3-3/4 inches x 5-3/4 inches x 12 inches and hold 15 tapes each. Workbooks are stored in bound volumes of 8-1/2 x 11 pages. Add two additional inches to the number you arrive at to allow space for shelf building material itself.

3. Enter in Column D the ceiling height (including light fixtures as part of the ceiling) in the storage area.

4. Enter in Column E the shelf frontage, the average space occupied by one segment of instructional materials. When combined media like slide and audiotape are to be stored together be sure to include the space taken up by both.

5. Enter in Column F the total number of segments in each medium.

6. Enter in Column G the total number of copies of each segment to be kept on hand at the Learning Center. This includes multiple copies for multiple use and spares.

7. For each type of material to be stored enter in Column H the product obtained by multiplying the number in Column E by the number in Column F and by multiplying that result by the number in Column G.

8. For each type of stored material divide the number in Column D by the number in Column B. This gives you the number of shelves which can stack vertically. Enter the result in Column I.

9. Enter the length of shelf which can be accommodated in the storage area while still allowing adequate room for a

three foot walkway on the ends. Exact layout of the space being designed is important here, since space may only be required on one end of the shelf.

10. For each type of stored material divide the number in column H by Line no. 10. This determines the number of shelf lengths of a given height required to store all copies of a given segment type. Divide that result by the number in Column I to determine the total number of shelf segments occupied floor to ceiling with segments. Enter the answer in Column J.

11. Reconcile fractions of shelf segments obtained in Line no. 11 by combining them to produce as close to whole shelf segments as possible. Take into account the variations in shelf height required by each media.

12. Add the shelf segments (in Column J) required for all media together and multiply this by the value in Line no. 10. Multiply that result by 4. This will give the total floor space in square feet required for storage shelves including walkways and assuming a 12 inch shelf depth and a 3 ft. walkway between shelves. Enter the value here _____.

E. Classrooms

The following classroom facilities are required for each training squadron:

A large, formal, student classroom (lecture room). This room should be sized to accommodate 30 students. This room must also have space to display the 1:1 cockpit mockup with detachable panels and the avionics mockup.

A small classroom for about ten students, an instructor, furnishings, and media equipment when required. This room will be used for small group meetings or as a second classroom when the large classroom is occupied.

A small discussion room which must be large enough to contain the CFT and a maximum of ten students and appropriate furnishings. It will be used for discussion group meetings and for CFT instruction.

Furnishings for the large classroom include:

1. Projection screen
2. 30 chairs with folding writing area arms
3. Chalkboard
4. Instructor lectern (optional)

WORKSHEET #5 (ONE ONLY REQUIRED)
CALCULATION OF LEARNING CENTER STORAGE EQUIPMENT AND SPACE

| A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|
| MATERIAL TO BE STORED | HEIGHT OF SHELF REQUIRED | CEILING HEIGHT IN STORAGE AREA | SHELF FRONTAGE OCCUPIED BY ONE SEGMENT | TOTAL NO. OF SEGMENTS IN MEDIUM | TOTAL NO. OF COPIES OF EACH SEGMENT | TOTAL SHELF FRONTAGE REQUIRED | NUMBER OF STACKED SHELVES | SHELF SEGMENTS OCCUPIED |
| AUDIOTAPE ONLY | | | | | | | | |
| SLIDE/ WORKBOOK | | | | | | | | |
| TAPE SLIDE | | | | | | | | |
| WORKBOOK ONLY | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

Furnishings for the small classroom and the discussion room include:

1. Ten chairs with folding writing area arms
2. Projection screen
3. Chalkboard

F. Training device space

Space for the CFT, the 1:1 cockpit mockup, and the avionics mockup has already been provided for in the large classroom and discussion room. Other training devices for which space must be provided at the Learning Center are:

1. Stick and throttle trainer
2. Stores management set desktop trainer

Space for the stick and throttle trainer may be added to the study area, provided adequate visual and sound screening are also set up to avoid distractions to students at the carrels. It is not advised that the trainer be placed in a classroom, since that would over-schedule the classrooms which already hold the CFT.

Space for the desktop trainer may be provided by adding one carrel to the total already calculated and by increasing the study space area to accommodate the extra carrel.

G. Lounge

To provide an informal instruction and discussion area, a lounge should be available. It should be of a size sufficient to accommodate a coffee/soft drink refreshment area, couches and chairs, and storage areas for auxiliary reading materials. Sizing of the area should be based on a 10 to 20 student capacity figure.

H. Briefing rooms

It is customary for the Squadron to provide sufficient briefing rooms for use by instructors and students in preflight briefing and post flight debriefing when required. These are assumed as part of the plan for F-16 training, and they should be provided for in squadron facilities plans. Present USAF/TAC standards in determining quantities and characteristics of these briefing rooms apply.

## VII. Training Device Personnel and Facilities

Training device personnel and facilities requirements are summarized in Table 1 below.

Table 1

TRAINING DEVICE PERSONNEL AND FACILITIES REQUIREMENTS

| Training Device | Personnel Requirements | Facilities Requirements |
|---|---|---|
| Stick & Throttle | SUPERVISION: Under control of Squadron. (Squadron Equipment Officer or designated representative.)<br><br>OPERATION: Operated by students in the course of planned syllabus activities.<br><br>MAINTENANCE: TBD<br><br>SOURCE: Training Aids, 4444th OS, Luke AFB | To be housed at Learning Center for student use. |
| SMS desk-top Trainer | SUPERVISION: Under control of Squadron. (Squadon Equipment Officer or delegated representative.)<br><br>OPERATION: Operated by students in the course of planned syllabus activities.<br><br>MAINTENANCE: TBD<br><br>SOURCE: Training Aids, 4444th OS, Luke AFB | To be housed at Learning Center for student use. |
| Avionics mockup | SUPERVISION: Under control of Squadron. (Squadon Equipment Officer or designated representative.)<br><br>OPERATION: Operated by instructors during classroom activities.<br><br>MAINTENANCE: TBD<br><br>SOURCE: Training Aids, 4444th OS, Luke AFB | To be housed in classroom for instructor and student use. |

| Training Device | Personnel Requirements | Facilities Requirements |
|---|---|---|
| Detachable panels mockup | SUPERVISION: Under control of Squadron. (Squardon Equipment Officer)<br><br>OPERATION: No operator required<br><br>MAINTENANCE: TBD<br><br>SOURCE: Training Aids, 4444th OS, Luke AFB | To be housed at Learning Center for student use. |
| CFT | SUPERVISION: Under control of Squadron. (Squadon Equipment Officer)<br><br>OPERATION: Operated by students in the course of planned syllabus activities.<br><br>MAINTENANCE: To be accomplished by one airman of the appropriate AFSC.<br><br>SOURCE: Air Training Command, Randolph AFB | To be housed at Learning Center for student use. |
| EPT | SUPERVISION: Under control of Wing Life Support Officer<br><br>OPERATION: Operated by Wing Life Support. Each squadron also has Life Support Officer authorized to operate.<br><br>MAINTENANCE: To be accomplished by one airman of the appropriate AFSC.<br><br>SOURCE: Air Training Command, Randolph AFB | Housed in Wing Life Support Building |
| OFT | SUPERVISION & OPERATION: Supervised, operated, and maintained by a simulator maintenance team under wing control. Team made up of 17 USAF enlisted personnel.<br><br>MAINTENANCE: Maintenance to be supported by some contractor provided support.<br><br>SOURCE: Singer/Link Co. | Housed in main-specially-constructed simulator building |

ATTACHMENT I

F-16 INSTRUCTIONAL SUBSYSTEMS
AND FUNCTIONS LIST

This section names the subsystems of the F-16 instructional systems and the functions carried out by each. Figure I-1 shows the subsystems in relations to each other. Each is numbered to correspond with the functions list which follows the figure. One subsystem placed beneath another on this chart is under the control and supervision of the higher system.

Subsystems were identified through an analysis of the functions required to operate the F-16 instructional system. System procedures must be planned around the execution of those functions. This allows the planning of system management and operation to be deliberate and systematic. In the future it will ensure that changes in system resources or requirements which dictate changes in system operation can be dealt with in the same straightforward way. Functions specified in this section may be prioritized, modified, combined, reassigned, eliminated, or otherwise manipulated directly through the use of the functional list.

The records and reports, and scheduling subsystems are not independent of the other subsystems. For the most part the functions carried out within these two subsystems are in support of the functions of the remaining subsystems. There is a close correspondence therefore, between functions of the records and reports, and scheduling subsystems and coordinate functions in the other subsystems. These correspondences are marked with a parenthetic note referring to the appropriate corresponding function.

The list of subsystems and their functions follows. An FL number is given to each function for identification purposes. Functions are shown in outline form. Detailed planning occurs for those functions which lie at the lowest levels of the outline.

Functions to be carried out at the central control site are marked with a C. Decentralized training site functions are marked with a T.

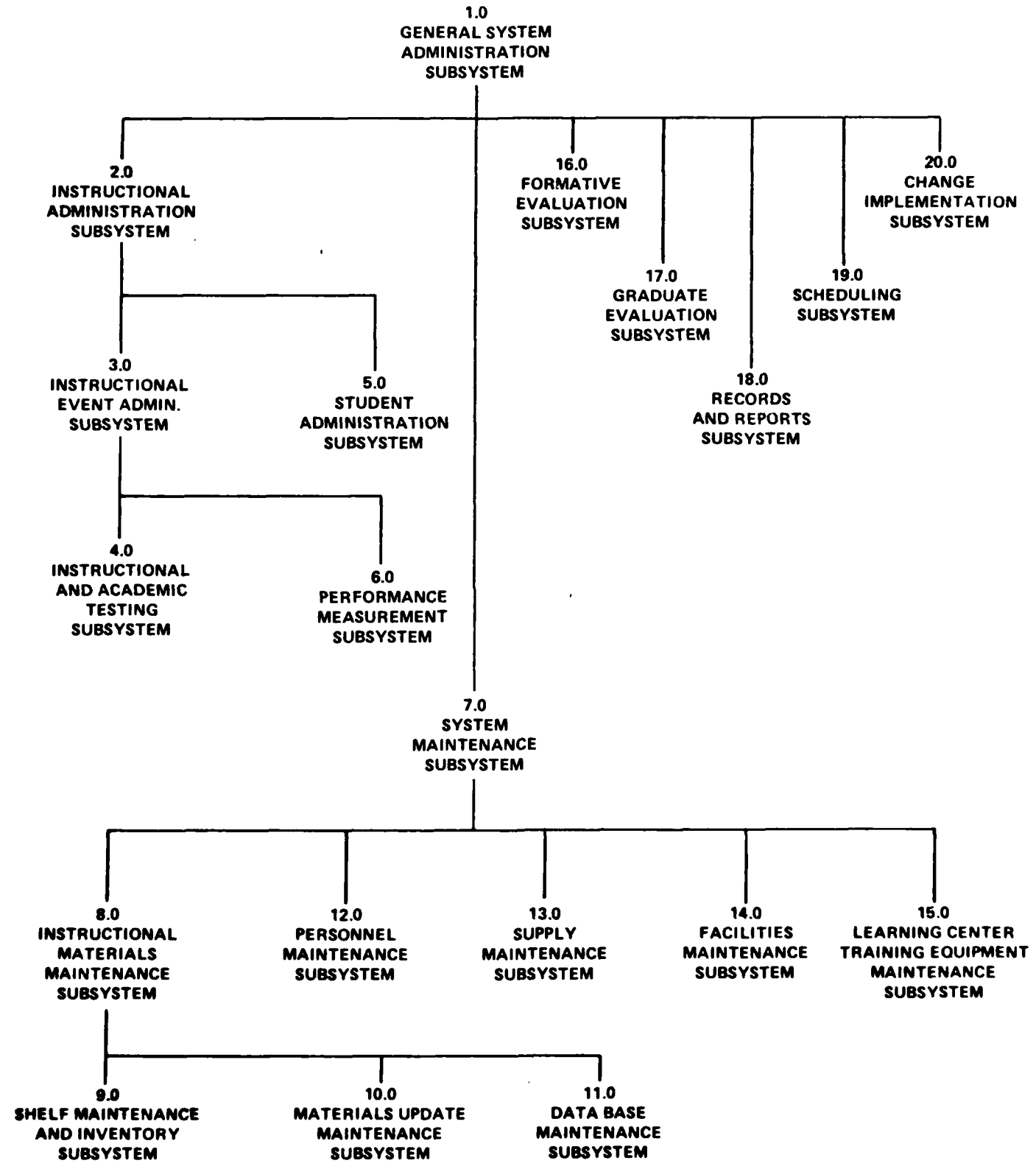



FIGURE I–1. SUBSYSTEMS WITHIN THE F-16 TRAINING SYSTEM.

1.0 Subsystem: General System Administration.

Functions:

TF 3.0 Perform general system administration

TF 3.1 Prepare instructional system budget, production forecast, and schedules report (see FL 8.1.1)

TF 3.2 Acquire system resources and personnel

TF 3.3 Summarize and report system activity and fitness (see FL 7.1.1)

TF 3.4 Analyze and report system resource expenditures (see FL 7.1.2)

TF 3.5 Supervise coordination of all system-related service agencies

TF 3.6 Review, approve and implement all proposed system modifications and initiate modifications planning as needed (see FL 8.1.2)

TF 3.7 Supervise and manage all resource and personnel use

TF 3.8 Supervise operation of all subsystems

2.0 Subsystem: Instructional Administration

Functions:

TF 2.1 Schedule and supervise instructional personnel (see FL 8.2.1)

TF 2.2 Coordinate materials and gradeslip update

SF 2.3 Schedule and supervise Learning Center personnel (see FL 8.2.2)

3.0 Subsystem: Instructional Event Administration

Functions:

SF 2.4 Conduct instructional event administration
- SF 2.4.1 Issue and retrieve instructional means
  - SF 2.4.1.1 Issue and retrieve unclassified instructional materials for student use (see FL 7.2.1 and FL 7.2.2)
    - SF 2.4.1.1.1 Issue and retrieve instructional materials for student use
    - SF 2.4.1.1.2 Issue and retrieve academic tests (other than end-of-phase exams)
    - SF 2.4.1.1.3 Issue and retrieve equipment for student use
  - SF 2.4.1.2 Issue and retrieve instructional materials (equipment, materials) for instructor use in classroom (see FL 7.2.3 and FL 7.2.4)
  - SF 2.4.1.3 Issue and retrieve classified instructional materials/tests for student or instructor use (see FL 7.2.1 and FL 7.2.2)
  - SF 2.4.1.4 Issue and retrieve adjunct study materials (see FL 7.2.3 and FL 7.2.4)
- SF 2.4.2 Instruct student in use of instructional materials/tests

4.0 Subsystem: Instruction and Academic Testing

Functions:

SF 1.0 Conduct instruction and academic testing

SF 1.1 Conduct instruction
- SF 1.1.1 Select instructional event (progressional or remedial) (see FL 8.3.1)
- SF 1.1.2 Determine student qualifications for the instructional event
- SF 1.1.3 Schedule the instructional event, equipment, and personnel (see FL 8.3.1, FL 8.3.2, and FL 8.3.3)
- SF 1.1.4 Execute instructional event
  - SF 1.1.4.1 Execute mediated academic instructional presentations
  - SF 1.1.4.2 Execute discussion group
  - SF 1.1.4.3 Execute tutoring session
  - SF 1.1.4.4 Execute training device session
  - SF 1.1.4.5 Execute aircraft flight
- SF 1.1.5 Produce record of event outcome (see FL 7.3.1)
- SF 1.1.6 Determine need for remediation (see FL 7.3.2)

SF 1.2 Conduct testing
- SF 1.2.1 Determine need for informal academic test (see FL 8.3.1)
  - SF 1.2.1.1 Determine need and form for informal academic test
  - SF 1.2.1.2 Determine need and form for formal academic test
  - SF 1.2.1.3 Determine need and form for academic certification test
- SF 1.2.2 Schedule academic test (see FL 8.3.1)
- SF 1.2.3 Administer test
- SF 1.2.4 Score test/assign grade (see FL 7.3.3)
- SF 1.2.5 Provide feedback on test results (see FL 7.3.4)
- SF 1.2.6 Record scores/grades and other test data (see FL 7.3.5)

5.0 Subsystem: Student Administration

Functions:

WF 2.5 Conduct student administration
- WF 2.5.1 Screen incoming students
  - WF 2.5.1.1 Create student entry level skill record
    - WF 2.5.1.1.1 Administer skill pretests and interviews as required
    - WF 2.5.1.1.2 Collect previous records of skill levels (see FL 7.5.1)
    - WF 2.5.1.1.3 Analyze incoming student data
  - WF 2.5.1.2 Compare student profiles with minimal entry requirements and decide to reject/remediate/accept the individual student (see FL 7.5.2)
  - WF 2.5.1.3 Match instructional plan to student incoming characteristics
    - WF 2.5.1.3.1 Prescribe appropriate entry level to instruction
    - WF 2.5.1.3.2 Prescribe remediation instruction (see FL 8.5.1)
    - SF 2.5.1.3.3 Select student/instructor matchings if required (see FL 8.5.2)
    - WF 2.5.1.3.4 Prescribe strategy options, pace options, media options, etc. available to student
- WF 2.5.2 Enroll student in system
  - WF 2.5.2.1 Set up record (see FL 7.5.3)
  - WF 2.5.2.2 Provide orientation to base and training system policies and facilities
  - WF 2.5.2.3 Provide passes/badges/ID/other administrative paperwork (see FL 7.5.4)
  - SF 2.5.2.4 Produce training schedule for individual student (see FL 7.5.5)
- SF 2.5.3 Provide advisement
  - SF 2.5.3.1 Provide system initiated advisement
    - SF 2.5.3.1.1 Provide periodic advisement
    - SF 2.5.3.1.2 Provide system initiated advisement
      - SF 2.5.3.1.2.1 Determine whether to progress or remediate student
      - SF 2.5.3.1.2.2 Plan remedial program for student
  - SF 2.5.3.2 Provide for student initiated advisement
- SF 2.5.4 Provide tutoring
  - SF 2.5.4.1 Provide system initiated tutoring
  - SF 2.5.4.2 Provide student initiated tutoring
- SF 2.5.5 Conduct elimination procedure
- SF 2.5.6 Graduate student
  - SF 2.5.6.1 Summarize records (see FL 7.5.5)
  - SF 2.5.6.2 Close files
  - SF 2.5.6.3 Pass data to next school/agency/assignment (see FL 7.5.6)
  - WF 2.5.6.4 Issue certification of graduation/elimination/washback to all appropriate agencies (see FL 7.5.6)
  - WF 2.5.6.5 Retrieve all materials/equipment from students
  - WF 2.5.6.6 Cancel schedules/assignments

6.0 Subsystem: Performance Measurement

Functions:

SF 1.2.3.2 Administer performance test
- SF 1.2.3.2.1 Determine need and form for informal performance test (see FL 8.4.1)
- SF 1.2.3.2.2 Determine need for formal performance test (see FL 8.4.1)
- SF 1.2.3.2.3 Determine need for performance certification test (see FL 8.4.1)
- SF 1.2.3.2.4 Schedule performance test (see FL 8.4.1)
- SF 1.2.3.2.5 Administer performance test
- SF 1.2.3.2.6 Store test/assign grade
- SF 1.2.3.2.7 Provide feedback on test results (see FL 7.4.2)
- SF 1.2.3.2.8 Record scores/grades and other test data (see FL 7.4.3)

7.0 Subsystem: System Maintenance

No functions.

8.0 Subsystem: Instructional Materials Maintenance

Functions:

TF 4.1 Schedule and supervise instructional development personnel (see FL 8.6.2, FL 8.6.3, FL 7.6.1, and FL 7.6.3)

TF 4.2 Coordinate schedules and volumes with development support service heads (e.g., photo, audio recording) (see FL 8.6.1 and FL 7.6.2)

9.0 Subsystem: Shelf Maintenance and Inventory

Functions:

SF 4.2 Perform instructional materials, tests, and equipment shelf maintenance
- SF 4.2.1 Store instructional materials, tests, and equipment
  - SF 4.2.1.1 Store unclassified instructional materials, and equipment
  - SF 4.2.1.2 Store classified instructional materials, and equipment
  - SF 4.2.1.3 Store tests
- SF 4.2.2 Assemble instructional materials, tests, and equipment for delivery to student/instructor (see FL 7.7.1)
- SF 4.2.3 Distribute instructional materials
- SF 4.2.4 Collect instructional materials
- SF 4.2.5 Inspect instructional materials (see FL 7.7.2)
- SF 4.2.6 Repair/replace or order instructional materials
- SF 4.2.7 Maintain material availability levels
  - SF 4.2.7.1 Inventory number, condition, location of materials, copies (see FL 7.7.4)
  - SF 4.2.7.2 Compare inventory with specified on-hand levels required
  - SF 4.2.7.3 Order additional copies of materials

10.0 Subsystem: Materials Update Maintenance

Functions:

TF 4.3 Revise or author new instructional materials, tests, training guides, briefing guides, instructor guides, phase manuals, etc.

- WF 4.3.1 Conduct QC data review
- SF 4.3.2 Determine need for revision or need for new materials
- TF 4.3.3 Write revision specifications or specifications for new materials
- TF 4.3.4 Author, review, and approve draft materials
- TF 4.3.5 Produce tryout version
- TF 4.3.6 Conduct tryout
- TF 4.3.7 Conduct tryout data review
- TF 4.3.8 Determine need for revision of tryout version
- TF 4.3.9 Write revision specifications
- TF 4.3.10 Author and produce revisions
- TF 4.3.11 Produce final versions

11.0 Subsystem: Data Base Maintenance

Functions:

TF 4.4 Revise system data base documents (see FL 7.8.1, FL 7.8.2, and FL 8.7.1)
- TF 4.4.1 Revise task listing data base document
- TF 4.4.2 Revise criterion-referenced objectives data base document
- TF 4.4.3 Revise objectives hierarchies data base document
- TF 4.4.4 Revise target population survey data base document
- TF 4.4.5 Revise goal analysis data base document
- TF 4.4.6 Revise media selection data base document
- TF 4.4.7 Revise syllabus data base document
- TF 4.4.8 Revise TSRA current calculation report data base document
- TF 4.4.9 Revise system design data base documents (instructional, management, performance measurement)
- TF 4.4.10 Revise quality control data base document

TF 4.5 Revise system ISD procedures documents
- TF 4.5.1 Revise task listing procedures document
- TF 4.5.2 Revise criterion-referenced objectives procedures document
- TF 4.5.3 Revise objectives hierarchies procedures document
- TF 4.5.4 Revise target population survey procedures document
- TF 4.5.5 Revise goal analysis procedures document
- TF 4.5.6 Revise media selection procedures document
- TF 4.5.7 Revise syllabus construction procedures document
- TF 4.5.8 Revise training support requirements analysis procedures document
- TF 4.5.9 Revise authoring and production procedures documents

TF 4.6 Revise system plan documents

12.0 Subsystem: Personnel Maintenance

Functions:

WF 4.7 Perform personnel acquisition, training, and certification

- WF 4.7.1 Select personnel for system
- WF 4.7.2 Train system personnel (see FL 8.8.1)
- WF 4.7.3 Conduct personnel certification (see FL 7.9.1 and FL 8.8.2)
- WF 4.7.4 Monitor, evaluate, and report on-the-job performance
- WF 4.7.5 Conduct inservice training

13.0 Subsystem: Supply Maintenance

Function:

WF 4.8 Perform supply maintenance
- WF 4.8.1 Maintain adequate supply levels for instructional development personnel
- WF 4.8.2 Maintain adequate supply levels for students
- WF 4.8.3 Maintain adequate supply levels for instructors
- WF 4.8.4 Maintain adequate supply levels for administrative support personnel

14.0 Subsystem: Facilities Maintenance

Functions:

SF 4.9 Perform facilities working order maintenance
- SF 4.9.1 Observe necessary security procedures
- SF 4.9.2 Maintain life support systems (e.g., electricity, air conditioning, water, rest rooms)
- SF 4.9.3 Ensure safety conditions
- SF 4.9.4 Perform custodial functions

15.0 Subsystem: Learning Center Training Equipment Maintenance

Function:

SF 4.10 Perform Learning Center training equipment working order maintenance (see FL 7.7)
- SF 4.10.1 Store equipment
  - SF 4.10.1.1 Store unclassified equipment
  - SF 4.10.1.2 Store classified equipment
  - SF 4.10.1.3 Store equipment replacement parts and tools
- SF 4.10.2 Provide equipment for use by instructor/student
  - SF 4.10.2.1 Provide equipment for use within classroom/carrels
  - SF 4.10.2.2 Provide equipment for use outside classroom/carrels
- SF 4.10.3 Inspect equipment
- SF 4.10.4 Troubleshoot and repair/replace malfunctioning equipment
- SF 4.10.5 Maintain equipment availability levels
  - SF 4.10.5.1 Inventory number, condition, location of equipment
  - SF 4.10.5.2 Compare inventory with specified onhand levels required
  - SF 4.10.5.3 Order additional pieces of equipment

16.0 Subsystem: Formative Evaluation

Function:

WF 5.0 Perform ongoing system formative evaluation

WF 5.1 Plan formative evaluation activities and schedules (see FL 8.9.1)

WF 5.2 Coordinate data collection needs and schedules management

WF 5.3 Design/revise data analysis procedures

WF 5.4 Produce/revise instruments for data collection

SF 5.5 Collect evaluation data (see FL 7.10.1)

WF 5.6 Analyze evaluation data

WF 5.7 Produce evaluation summary reports (see FL 7.10.2)

17.0 Subsystem: Graduate Evaluation

Function:

TF 6.0 Perform graduate evaluation

TF 6.1 Plan graduate evaluation activities (see FL 8.10.1)

TF 6.2 Coordinate graduate evaluation needs and schedules with system management and operational commanders

TF 6.3 Design/revise, prepare, and send evaluation materials

TF 6.4 Conduct evaluation interviews (see FL 7.11.1)

TF 6.5 Analyze evaluation data

TF 6.6 Prepare evaluation summary report (see FL 7.11.2)

18.0 Subsystem: Records and Reports

Functions:

TF 7.0 Produce system records and reports

TF 7.1 Produce general system administration records and reports
- TF 7.1.1 Produce systems activity report
- TF 7.1.2 Produce system resource utilization report

WF 7.2 Produce instructional event adminstration reports
- SF 7.2.1 Collect data on instructional materials, tests, and learning center equipment issue and retrieval (classified and unclassified)
- WF 7.2.2 Produce instructional materials, tests, and Learning Center usage report (classified and unclassified)
- SF 7.2.3 Collect data on issue and retrieval of instructional materials to instructors, and issue and retrieval of adjunct study materials
- WF 7.2.4 Produce report on instructor usage of instructional materials and use of adjunct study materials

SF 7.3 Produce Instruction and academic testing reports and records
- SF 7.3.1 Collect data on instructional event outcomes
- SF 7.3.2 Produce remediation needs report
- SF 7.3.3 Score tests/assign grades
- SF 7.3.4 Produce test results report
- SF 7.3.5 Record test results in student record
- SF 7.3.6 Produce instruction and student summary performance reports

SF 7.4 Produce performance measurement records and reports
- SF 7.4.1 Collect data from performance measurement test
- SF 7.4.2 Produce student performance measurement test results report
- SF 7.4.3 Record performance measurement test results in student record
- SF 7.4.4 Produce test and student summary performance reports

WF 7.5 Produce student administration records and reports
- WF 7.5.1 Include incoming student records in student training record
- WF 7.5.2 Produce student profile comparison report
- WF 7.5.3 Set up new student record
- WF 7.5.4 Prepare incoming student administrative paperwork
- WF 7.5.5 Produce student terminal training report
- WF 7.5.6 Produce reports for forwarding to student's receiving command and all appropriate agencies

TF 7.6 Produce instructional materials maintenance reports and records
- TF 7.6.1 Produce instructional development progress and shortfall reports
- TF 7.6.2 Produce instructional development resource and resource utilization reports
- TF 7.6.3 Produce instructional development personnel and resource utilization reports

WF 7.7 Produce shelf maintenance and inventory records and reports
- WF 7.7.1 Produce segment materials list report
- SF 7.7.2 Collect data on damaged or missing instructional materials
- SF 7.7.3 Produce materials replacement report
- SF 7.7.4 Produce current materials expected inventory report

TF 7.8 Produce data base maintenance reports and records
- TF 7.8.1 Produce current version printout of all data base documents
- TF 7.8.2 Collect data on all data base document changes and enter into record

SF 7.9 Produce personnel maintenance records and reports
- SF 7.9.1 Produce personnel certification status reports

TF 7.10 Produce formative evaluation records and reports
- SF 7.10.1 Collect data from formative evaluation procedures
- TF 7.10.2 Produce formative evaluation summary reports

TF 7.11 Produce graduate evaluation records and reports
- TF 7.11.1 Collect dates from graduate evaluation procedures
- TF 7.11.2 Produce graduate evaluation summary report

TF 7.12 Disseminate reports to appropriate agencies

TF 7.13 Dispense records to appropriate receiving commands

19.0 Subsystem: Scheduling

Functions:

TF 8.0 Perform system scheduling

TF 8.1 Perform general system administrative scheduling
- TF 8.1.1 Produce system combined resource and personnel use forecasts and schedules for long-range planning

W/SF8.2 Perform instructional administration scheduling
- WF 8.2.1 Produce instructional development personnel and service agency utilization schedules
- SF 8.2.2 Produce learning center personnel utilization schedules (daily schedule type)

SF 8.3 Perform instructional and academic testing scheduling
- SF 8.3.1 Produce instructional event and test prescriptions and schedules for individual students
- SF 8.3.2 Produce equipment use schedule for each piece of equipment
- SF 8.3.3 Produce instructor personnel schedules

SF 8.4 Perform performance measurement scheduling
- SF 8.4.1 Produce performance measurement test ready list and schedule
- SF 8.4.2 Produce schedule for equipment to be used in testing

W/SF8.5 Perform student administration scheduling
- WF 8.5.1 Produce entering student remediation prescription and schedule
- SF 8.5.2 Collect data on student/instructor pairing, if any
- SF 8.5.3 Produce initial student training schedule

TF 8.6 Perform instructional materials maintenance scheduling
- TF 8.6.1 Produce instructional development product schedules (PERT type)
- TF 8.6.2 Produce instructional materials periodic inspection and review schedule
- TF 8.6.3 Produce instructional development personnel daily work schedules

TF 8.7 Perform data base maintenance scheduling
- TF 8.7.1 Produce data base document regular review schedule

WF 8.8 Perform personnel maintenance scheduling
- WF 8.8.1 Produce personnel training schedules
- WF 8.8.2 Produce personnel recertification schedules

WF 8.9 Perform formative evaluation scheduling
- WF 8.9.1 Produce formative evaluation segment review schedule

20.0 Subsystem: Change Implementation

Function:

TF 9.0 Implement system change

TF 9.1 Schedule implementation activities (see FL 8.11.1)

TF 9.2 Arrange for cooperative agency coordination

TF 9.3 Procure/order equipment and facilities

TF 9.4 Receive and inspect equipment and facilities

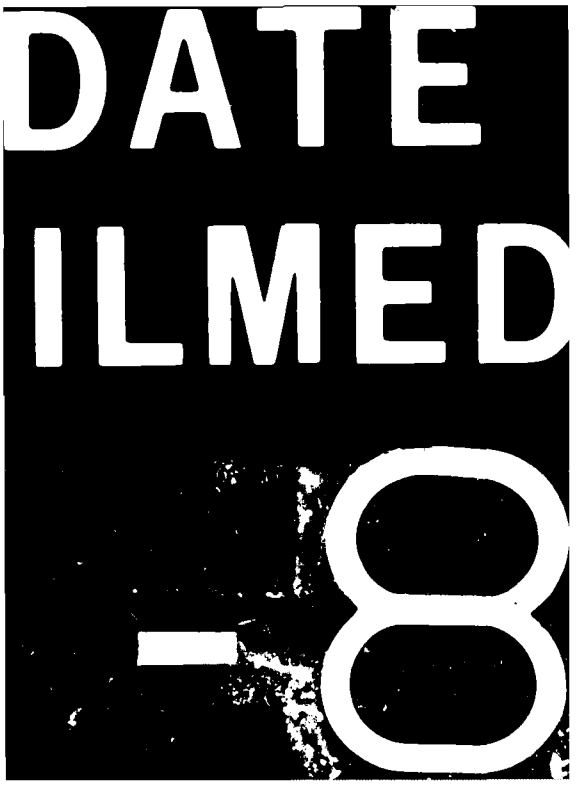
TF 9.5 Set up and test equipment

TF 9.6 Select and train system personnel

TF 9.7 Rehearse or simulate system functioning

TF 8.10 Perform graduate evaluation scheduling
    TF 8.10.1 Produce graduate evaluation activities schedule

TF 8.11 Perform change implementation scheduling
    TF 8.11.1 Produce change implementation schedules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